CLAIMS

1. A method for evaluating download performance of web pages accessible via a network (N), characterized in that it includes the steps of:

      - providing at least one model (20) for predicting a set of download performance parameters for said web pages, said at least one model including at least one optimisation parameter (λ),

      - defining (102) a set (18) of sample web pages,

      - measuring (104, 108) said set of download performance parameters for said sample web pages (18),

      - evaluating (110) said set of download performance parameters for said sample web pages (18) on the basis of said model (20) for different values of said at least one optimisation parameter (λ),

      - defining an error indicative of the difference between said set of download performance parameters for said sample web pages (18) as measured (104, 108) and as evaluated on the basis of said model (20), respectively,

      - selecting (110 to 117) an optimised model including a value of said at least one optimisation parameter (λ) in order to reduce said error below a predetermined value,

      - selecting (120) a set of use web pages, and

      - evaluating (124) said set of download performance parameters for said selected set of use web pages on the basis of said optimised model.

2. The method of claim 1, characterized in that said set of download performance parameters includes at least one parameter selected from a group comprising:

      - download time for a given web page, and

      - an efficiency index indicative of how said given web page exploits the capacity of said network (N).

3. The method of claim 1, characterized in that said at least one model includes at least one parameter selected from a group comprising:

- the throughput of said network (N),
- the round trip time (RTT) of said network (N), and
- at least one of the type and size of each object included in said web pages.

4. The method of claim 1, characterized in that said sample web pages are selected as a statistically meaningful set of the web pages available for downloading via said network (N).

5. The method of claim 1, characterized in that said at least one model is selected by taking into account at least one threshold related to operational parameters of said network (N).

6. The method of claim 5, characterized in that it includes the steps of providing in said network (N) at least one server having a respective processing time and in that said at least one threshold is a function of said processing time.

7. The method of claim 1, characterized in that it includes the steps of:

- defining, for each sample page in said set of sample pages, a partial error indicative of the difference between said set of download performance parameters for said sample web pages (18) as measured (104, 108) and as evaluated on the basis of said model (20), respectively,

- determining, from the partial errors defined for each sample page in said set of sample pages a global prediction error,

- selecting (110 to 117) said optimised model including a value of said at least one optimisation parameter (λ) minimising said global prediction error.

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8. The method of claim 7, characterized in that it includes the steps of defining said global prediction error as one of a mean value (RMS) and a peak value (PSNR) of the partial errors defined for
5   each sample page in said set of sample pages.

9. The method of claim 1, characterised in that it includes the step of providing different types of said at least one model (20) for different types of said network (N).

10   10. A method of evaluating download times of web pages accessible via a network (N), characterized in that it includes the steps of evaluating said download times on the basis of at least one model comprising a module for evaluating the sum of:

15   - at   least   one   first   factor   determined analytically on the basis of network (b, l) and web page (n, d, h) parameters, and
        - a   second   factor   being   a   function   of   an optimisation parameter (λ).

20   11. The method of claim 10 characterised in that said second factor is a function of hyperbolic type.

12. The   method   of   claim   3   or   claim   10, characterized in that said at least one model (20)
25 corresponds to the following relationship:

$$t = \left(\frac{nd}{b}\right) + \left(\frac{nh}{b} + 2l + \frac{(n-1)l}{\lambda}\right)$$

where t is the total download time of the page, n is the number of objects therein, d is the average size for its objects, b is the downstream throughput, h is
30 the dimension of the HTTP headers, l is the network round trip time (RTT) and λ is said at least one optimisation parameter.

13. A system for evaluating download performance of   web   pages   accessible   via   a   network   (N),
35 characterized in that it includes:

- first data base items (20) defining at least one model for predicting a set of download performance parameters for said web pages, said at least one model including at least one optimisation parameter (λ),

5   - second data base items defining a set (18) of sample web pages,

- measuring tools (12, 14) for measuring (104, 108) said set of download performance parameters for said sample web pages (18),

10   - a predictor (30) for evaluating (110) said set of download performance parameters for said sample web pages (18) on the basis of said model (20) for different values of said at least one optimisation parameter (λ),

15   - an optimiser module (24) for defining an error indicative of the difference between said set of download performance parameters for said sample web pages (18) as measured (104, 108) and as evaluated on the basis of said model (20), respectively, said

20 optimiser module (24) being configured for selecting (110 to 117) an optimised model including a value of said at least one optimisation parameter (λ) able to reduce said error below a predetermined value,

- third data base items (26) indicative of a

25 selected set of use web pages,

- said predictor (30) being configured for evaluating (124) said set of download performance parameters for said selected set of use web pages on the basis of said optimised model.

30   14. The system of claim 13, characterized in that said set of download performance parameters includes at least one parameter selected from a group comprising:

- download time for a given web page, and
- an efficiency index indicative of how said given

35 web page exploits the capacity of said network (N).

15. The system of claim 13, characterized in that said at least one model includes at least one parameter selected from a group comprising:
- the throughput of said network (N),
5 - the round trip time (RTT) of said network (N), and
- at least one of the type and size of each object included in said web pages.

16. The system of claim 13, characterized in that 10 said second data base items (18) is configured for defining sample web pages comprising a statistically meaningful set of the web pages available for downloading via said network (N).

17. The system of claim 13, characterized in that 15 said optimiser module (24) is configured for:
- defining, for each sample page in said set of sample pages, a partial error indicative of the difference between said set of download performance parameters for said sample web pages (18) as measured 20 (104, 108) and as evaluated on the basis of said model (20), respectively,
- determining, from the partial errors defined for each sample page in said set of sample pages, a global prediction error,
25 - selecting (110 to 117) said optimised model including a value of said at least one optimisation parameter (λ) minimising said global prediction error.

18. The system of claim 17, characterized in that said optimiser module (24) is configured for defining 30 said global prediction error as one of a mean value (RMS) and a peak value (PSNR) of the partial errors defined for each sample page in said set of sample pages.

19. The system of claim 13, characterised in that 35 said first data base items (20) are representative of

different types of said at least one model (20) for different types of said network (N).

20. A system for evaluating download times of web pages accessible via a network (N), characterized in that it includes data base items (20) defining at least one model for evaluating said download times, said model comprising a module for evaluating the sum of:

- at least one first factor determined analytically on the basis of network (b, l) and web page (n, d, h) parameters, and

- a second factor being a function of an optimisation parameter (λ).

21. The system of claim 20 characterized in that said second factor is a function of hyperbolic type.

22. The system of claim 15 or claim 20, characterized in that said at least one model (20) corresponds to the following relationship:

$$t = \left(\frac{nd}{b}\right) + \left(\frac{nh}{b} + 2l + \frac{(n-1)l}{\lambda}\right)$$

where t is the total download time of the page, n is the number of objects therein, d is the average size for its objects, b is the downstream throughput, h is the dimension of the HTTP headers, l is the network round trip time (RTT) and λ is said at least one optimisation parameter.

23. A computer program product directly loadable into the memory of a computer and including software code portions for performing the steps of any of claims 1 to 12 when the product is run on a computer.